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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/783,657	02/14/2001	Wang-Chien Lee	00-8013	8964
32127	7590	11/20/2003	EXAMINER	
VERIZON CORPORATE SERVICES GROUP INC. C/O CHRISTIAN R. ANDERSON 600 HIDDEN RIDGE DRIVE MAILCODE HQEO3HO1 IRVING, TX 75038			LY, ANH	
			ART UNIT	PAPER NUMBER
			2172	
DATE MAILED: 11/20/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/783,657	LEE ET AL.	
	Examiner Anh Ly	Art Unit 2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 August 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-74 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-74 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 14 February 2001 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 08/25/2003 have been fully considered but they are not persuasive.

Applicants' argued that, "claims 1 and 37 are distinguishable from the disclosures contained in Cheng on the basis that the invention allows for automatic loading of an XML document into a relational database." (Page 24, the 1st paragraph).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., automatic loading of an XML document into a relational database) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Nowhere in the claims 1 and 37 have the word "automatic" or describe the automatically loading concept.

Applicants' argued in claim 67 that, "Cheng does not discloses "a system (10) for generating (28) schema (22)" as set forth in the preamble of claim 67." (Page 24, the 4th paragraph).

In response to applicant's arguments, the recitation "Cheng does not discloses "a system (10) for generating (28) schema (22)" as set forth in the preamble of claim 67" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the

claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Applicants' argued that, "Examiner has not particularly pointed out a citation in Cheng that contains a "metadata nesting table (94)"." (Page 24, the 4th paragraph).

Cheng discloses a table stores metadata for each XML in the database (internal registration table is storing the metadata of each XML in the database: col. 13, lines 15-40).

Applicants' argued that, "Cheng does not teach or suggest relating tables in a one-to-one or one-to-many configuration and Sarkar is not applicable to generation of the relational database tables suggests." (Page 26, the last paragraph).

Cheng discloses a relational database system is used for storing, querying and retrieval documents including metadata of XML documents (col. 7, lines 20-30). Cheng does not explicitly teach ER-diagram as well as one-to-many relationship. But Sarkar discloses XML/RDF documents representing metadata information stored in tables of relational database system (col. 6, lines 7-50) and tables relationship such as shown in fig. 7a and fig. 7b: Jeremy has many coming emails stored in the table. Thus Jeremy (the "one") is related to the emails (the "many") or 1:M relationship (col. 17, lines 20-40).

2. Claims 1-74 are pending in this application.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 12-17, 30-47 and 61-74 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent No. 6,519,597 issued to Cheng et al. (herein Cheng).

With respect to claim 1, Cheng discloses the steps of: extracting (24) metadata (34) representative of the document-type definition (18) from the document -type definition (18) (metadata of XML document consisting of DTD elements or components which are retrieved, searched or stored by users after integrating the XML documents into relational database system: col. 11, lines 58-65; also see col. 7, lines 20-28 and lines 40-42; XML extender for storing and retrieving XML documents); generating (28) the schema (22) for the relational database (14) from the metadata (34), wherein at least one table (20) is thereby defined in the relational database (14) corresponding to at least one content particle of the document-type definition (18) via the metadata (34) (schema is a place where data types, definitions and restrictions of usage are defined or documented: col. 3, 12-18 and lines 25-31); and loading (30) the document data (16) into the at least one table (20) of the relational database (14) according: to the relational

schema (22) in a manner driven by the metadata (34) (XML extender is used to store XML document; see fig. 4; see abstract lines 1-7 and col. 3, lines 25-31 and tables are created are XML table including one or more XML column from which the metadata is regarded (col. 12, lines 35-50 and DTD reference table col. 11, lines 58-65)).

With respect to claim 2, Cheng discloses generating (28) an item metadata table (90) corresponding to element type content particles in the document-type definition (18) (col. 11, lines 60-65; also see col. 5, lines 32-60 for DTD elements).

With respect to claim 3, Cheng discloses creating at least one default item in the item metadata table (90) (XML column in XML table: col. 12, lines 35-38).

With respect to claim 4, Cheng discloses updating the item metadata table (90) with each of the element type content particles the document-type definition (18) (col. 8, lines 15-19).

With respect to claim 5, Cheng discloses generating (28) an attribute metadata table (92) corresponding to attribute type content particles in the document--type definition (18) (col. 8, lines 57-67; also see col. 9, lines 1-3 and lines 57-60 and col. 5, lines 32-60 for element types of DTD by an example).

With respect to claim 6, Cheng discloses creating a default attribute value in the attribute metadata table (92) corresponding to attributes of element types in the document-type definition (18) (col. 8, lines 53-67 and col. 9, lines 1-3; also see col. 5, lines 32-60).

With respect to claim 7, Cheng discloses updating, the attribute metadata table (92) with each of the attribute type content particles of each element type of the

document-type definition (18) (col. 8, lines 15-19 also see col. 5 lines 32-60 for element types of DTD).

With respect to claim 8, Cheng discloses generating a nesting metadata table (94) for storing data items corresponding to nesting relationships implied in the document-type definition (18) (XML document is a nested document structures and associated semantics: col. 1, lines 45-50; see col. 14, lines 36-42: the content of XML document is used by SQL query statements defining the containment relationship, which is a nesting relationship).

With respect to claim 9, Cheng discloses generating a row in the nesting metadata table (94) corresponding to each relationship between items identified in the item metadata table (90) (row of DTD in XML document: col. 11, lines 60-65; XML document is a nested document structures and associated semantics: col. 1, lines 45-50; see col. 14, lines 36-42: the content of XML document is used by SQL query statements defining the containment relationship, which is a nesting relationship).

With respect to claim 10, Cheng discloses wherein the generated nesting table (94) row indicates the cardinality between a pair of items (row of DTL and XML column: col. 47, lines 60-65 and col. 12, lines 45-50).

With respect to claim 12, Cheng discloses generated nesting table (94) row indicates a relationship between a parent item and a child item (tree structure of document such as B-tree: col. 14, lines 62-67 and col. 15, lines 1-15; also see figs. 9 and 10).

With respect to claim 13, Cheng discloses the generated nesting table (94) row indicates a relative position of a child item with respect to other items in a definition of the corresponding parent item (col. 15, lines 61-65 and col. 16, lines 5-8).

With respect to claim 14, Cheng discloses creating at least one table in the schema (22) of the relational database corresponding to at least one row of the metadata item table (90) (col. 3, lines 12-18 and col. 11, lines 58-67).

With respect to claim 15, Cheng discloses generating (28) at least one default field in the table of the schema (22) (col. 2, lines 60-67).

With respect to claim 16, Cheng discloses altering the schema (22) of the relational database to add at least one column to the at least one table in the relational database (14) schema (22) corresponding to each row of the metadata attribute table (92) (col. 2, lines 60-67 and col. 12, lines 16-52; for schema: col. 3, 12-18 and lines 25-31).

With respect to claim 17, Cheng discloses altering the tables in the schema (22) of the relational database to add columns representing links between tables (20) of the relational database schema (22) corresponding to each relationship identified in each row of the metadata nesting table (94) (col. 12, lines 16-52 and col. 14, lines 36-42; for schema: col. 3, 12-18 and lines 25-31).

With respect to claims 30-36, Cheng discloses optimizing (26) the metadata (col. 11, lines 58-67); eliminating duplicate particle references in the metadata (col. 17, lines 50-61 also see fig. 13); simplifying references to corresponding elements, links and attributes in the metadata (col. 3, lines 12-18 and lines 45-50; also see col. 7, lines 40-

46); inlining particular attributes of the metadata (col. 2, lines 60-64 and col. 3, lines 12-18 and lines 45-50); wherein the document (12) is an XML document (col. 3, lines 32-36); wherein the document-type definition (18) is a DTD (col. 8, lines 53-55); and wherein the data (16) is tagged data (col. 14, lines 45-49 and col. 15, lines 58-67; also see col. 16, lines 1-8).

Claim 37 is essentially the same as claim 1 except that it is directed to a system rather than a method (Cheng discloses extenders for extracting, generating and loading such as XML extender and relational extender; metadata of XML document consisting of DTD elements or components which are retrieved, searched or stored by users after integrating the XML documents into relational database system: col. 11, lines 58-65; also see col. 7, lines 20-28 and lines 40-42; XML extender for storing and retrieving XML documents; col. 3, 12-18 and lines 25-31; and XML extender is used to store XML document; see fig. 4; see abstract lines 1-7 and col. 3, lines 25-31 and tables are created are XML table including one or more XML column from which the metadata is regarded (col. 12, lines 35-50 and DTD reference table col. 11, lines 58-65), and is rejected for the same reason as applied to the claim 1 hereinabove.

Claim 38 is essentially the same as claim 2 except that it is directed to a system rather than a method (col. 11, lines 60-65; also see col. 5, lines 32-60 for DTD elements), and is rejected for the same reason as applied to the claim 2 hereinabove.

Claim 39 is essentially the same as claim 3 except that it is directed to a system rather than a method (XML column in XML table: col. 12, lines 35-38), and is rejected for the same reason as applied to the claim 3 hereinabove.

Claim 40 is essentially the same as claim 4 except that it is directed to a system rather than a method (col. 8, lines 15-19), and is rejected for the same reason as applied to the claim 4 hereinabove.

Claim 41 is essentially the same as claim 5 except that it is directed to a system rather than a method (col. 8, lines 57-67; also see col. 9, lines 1-3 and lines 57-60 and col. 5, lines 32-60 for element types of DTD by an example), and is rejected for the same reason as applied to the claim 5 hereinabove.

Claim 42 is essentially the same as claim 6 except that it is directed to a system rather than a method (col. 8, lines 53-67 and col. 9, lines 1-3; also see col. 5, lines 32-60), and is rejected for the same reason as applied to the claim 6 hereinabove.

Claim 43 is essentially the same as claim 8 except that it is directed to a system rather than a method (XML document is a nested document structures and associated semantics: col. 1, lines 45-50; see col. 14, lines 36-42: the content of XML document is used by SQL query statements defining the containment relationship, which is a nesting relationship), and is rejected for the same reason as applied to the claim 8 hereinabove.

Claim 44 is essentially the same as claim 9 except that it is directed to a system rather than a method (row of DTD in XML document: col. 11, lines 60-65; XML document is a nested document structures and associated semantics: col. 1, lines 45-50; see col. 14, lines 36-42: the content of XML document is used by SQL query statements defining the containment relationship, which is a nesting relationship), and is rejected for the same reason as applied to the claim 9 hereinabove.

Claim 45 is essentially the same as claim 14 except that it is directed to a system rather than a method (col. 3, lines 12-18 and col. 11, lines 58-67), and is rejected for the same reason as applied to the claim 14 hereinabove.

Claim 46 is essentially the same as claim 16 except that it is directed to a system rather than a method (col. 2, lines 60-67 and col. 12, lines 16-52; for schema: col. 3, 12-18 and lines 25-31), and is rejected for the same reason as applied to the claim 16 hereinabove.

Claim 47 is essentially the same as claim 17 except that it is directed to a system rather than a method (col. 12, lines 16-52 and col. 14, lines 36-42; also for schema: col. 3, 12-18 and lines 25-31), and is rejected for the same reason as applied to the claim 17 hereinabove.

Claim 61 is essentially the same as claim 30 except that it is directed to a system rather than a method (col. 11, lines 58-67), and is rejected for the same reason as applied to the claim 30 hereinabove.

Claim 62 is essentially the same as claim 31 except that it is directed to a system rather than a method (col. 17, lines 50-61 also see fig. 13), and is rejected for the same reason as applied to the claim 33 hereinabove.

Claim 63 is essentially the same as claim 32 except that it is directed to a system rather than a method (col. 3, lines 12-18 and lines 45-50; also see col. 7, lines 40-46), and is rejected for the same reason as applied to the claim 29 hereinabove.

Claim 64 is essentially the same as claim 34 except that it is directed to a system rather than a method (col. 3, lines 32-36), and is rejected for the same reason as applied to the claim 34 hereinabove.

Claim 65 is essentially the same as claim 35 except that it is directed to a system rather than a method (col. 8, lines 53-55), and is rejected for the same reason as applied to the claim 35 hereinabove.

Claim 66 is essentially the same as claim 36 except that it is directed to a system rather than a method (col. 14, lines 45-49 and col. 15, lines 58-67; also see col. 16, lines 1-8), and is rejected for the same reason as applied to the claim 36 hereinabove.

With respect to claim 67, Cheng discloses an extractor (24) adapted to read a document-type definition (18) that extracts metadata (34) representative of the document-type definition (18) from the document-type definition (18), wherein the extractor stores the metadata (34) in at least three tables comprising a metadata item table (90) containing metadata (34) representative of element types in the document-type definition (18), a metadata attribute table (92) containing metadata (34) representative of attributes in the document type definition (18), and a metadata nesting table (94) containing metadata (34) representative of nesting relationships between particles in the document type definition (18) (Cheng discloses extenders for extracting, generating and loading such as XML extender and relational extender; metadata of XML document consisting of DTD elements or components which are retrieved, searched or stored by users after integrating the XML documents into relational database system: col. 11, lines 58-65; also see col. 7, lines 20-28 and lines 40-42; XML

extender for storing and retrieving XML documents; col. 3, 12-18 and lines 25-31; and XML extender is used to store XML document; see fig. 4; see abstract lines 1-7 and col. 3, lines 25-31 and tables are created are XML table including one or more XML column from which the metadata is regarded: col. 12, lines 35-50 and DTD reference table col. 11, lines 58-65).

With respect to claim 68, Cheng disclose a pattern-mapping table (36) initially constructed in an initialized state (col. 13, lines 46-50).

With respect to claim 69, Cheng discloses wherein the pattern mapping table (36) is loaded with actions indicative of relationships between the data (16) and the document-type definition (col. 7, lines 17-22 and col. 13, lines 46-50).

With respect to claim 70, Cheng disclose a generator (28) operably interconnected to the extractor (24) for generating (28) the schema (22) for the relational database (14) from the metadata (34), wherein at least one table (20) is thereby defined in the relational database (14) corresponding to at least one content particle of the document-type definition (18) via the metadata (see abstract lines 1-7 and col. 3, lines 25-31 and tables are created are XML table including one or more XML column from which the metadata is regarded: col. 12, lines 35-50 and DTD reference table col. 11, lines 58-65).

With respect to claim 71, Cheng discloses wherein the generator (28) forms a table (20) with at least one default field in the relational database (4) for each item contained in the metadata item table (col. 11, lines 60-65 and col. 14, lines 36-42).

With respect to claim 72, Cheng discloses wherein the generator (28) forms a column in a corresponding table (20) in the relational schema (22) corresponding to each attribute in the metadata attribute table (92) linked to an item in the metadata item table (col. 3, lines 12-18 and col. 11, lines 58-67).

With respect to claim 73, Cheng discloses wherein the generator (28) forms a link between tables in the relational database corresponding to nesting relationships contained in the metadata nesting table (col. 12, lines 16-52 and col. 14, line4s 36-42).

With respect to claim 74, Cheng discloses a loader (30) operably interconnected to the generator (213) for loading the document data (16) into the at least one table (20) of the relational database (14) according to the relational schema (22) and driven by the metadata (Cheng discloses extenders for extracting, generating and loading such as XML extender and relational extender; metadata of XML document consisting of DTD elements or components which are retrieved, searched or stored by users after integrating the XML documents into relational database system: col. 11, lines 58-65; also see col. 7, lines 20-28 and lines 40-42; XML extender for storing and retrieving XML documents; and see abstract lines 1-7 and col. 3, lines 25-31 and tables are created are XML table including one or more XML column from which the metadata is regarded: col. 12, lines 35-50 and DTD reference table col. 11, lines 58-65).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 11, 18-29, and 48-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,519,597 issued to Cheng et al. (herein Cheng) in view of US Patent No. 6,418,448 issued to Sarkar.

With respect to claim 11, Cheng discloses a method for generating a schema for a relational database as discussed in claim 1.

As to the limitation, "the cardinality is one-to-one and one-to-many," Cheng does not explicitly indicate that the relationships of one-to-one and one-to-many.

However, Sarkar discloses entity-relationship diagram (ER) of two entities of primary key/foreign key relationship for XML/RDF (see fig. 7(a) and 7(b) col. 17, lines 20-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Cheng with the teachings of Sarkar so as to obtain one-to-one and one-to-many relationship via ER for the XML/RDF (col. 17, lines 36-45). This combination would make the method for generating a schema relational database has a way of distribution the document or XML/RDF document over the web are mapped to data and metadata in multiple related object relational database for object SQL queries to fetch and manipulate information (Sarkar – col. 6, lines 44-50) and can be carrying the object SQL queries for execution within one or more object relational schema components over the web (Sarkar col. 6, lines 60-65). Also it would provide an application for storing XML documents in existent or newly created columns of a relational database table (Cheng – col. 3, lines 38-42) in the storing XML in the relational database environment.

With respect to claims 18-19, Cheng discloses a method for generating a schema for a relational database as discussed in claim 1.

As to the limitation, "adding a foreign key to a parent table if the identified relationship is a one-to-one relationship; one-to-many relationship," Cheng does not explicitly indicate that the foreign key and relationships of one-to-one and one-to-many.

However, Sarkar discloses entity-relationship diagram (ER) of two entities of primary key/foreign key relationship for XML/RDF (see fig. 7(a) and 7(b) col. 17, lines 20-41).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Cheng with the teachings of Sarkar so as to obtain one-to-one and one-to-many relationship via ER for the XML/RDF (col. 17, lines 36-45). This combination would make the method for generating a schema relational database has a way of distribution the document or XML/RDF document over the web are mapped to data and metadata in multiple related object relational database for object SQL queries to fetch and manipulate information (Sarkar – col. 6, lines 44-50) and can be carrying the object SQL queries for execution within one or more object relational schema components over the web (Sarkar col. 6, lines 60-65). Also it would provide an application for storing XML documents in existent or newly created columns of a relational database table (Cheng – col. 3, lines 38-42) in the storing XML in the relational database environment.

With respect to claims 20-22, Cheng discloses initializing a link table (col. 8, lines 5-10); determining whether each item in the metadata nesting table (94) contains a group type (col. 7, lines 17-22 and col. 18, lines 45-54); and initializing a pattern-mapping table (col. 13, lines 46-50).

With respect to claims 23-29, Cheng discloses mapping a link into the link table (36) for each item in the metadata nesting table (94) that does not contain a group type (col. 14, lines 36-42 and also see col. 7, lines 17-22); creating an additional link table

(36) containing a mapping of a link pattern for each group type identified in the metadata item table (col. 7, lines 17-22 and col. 13, lines 46-50); creating a create tuple loading action in the pattern mapping table (36) associated with a particular pattern corresponding to each item in the item metadata table (col. 12, lines 35-38 and col. 13, lines 46-50); creating an update tuple loading action in the pattern mapping table (36) associated with a particular pattern corresponding to each attribute in the attribute metadata table (col. 12, lines 35-38 and col. 13, lines 46-50); creating a create tuple loading action in the pattern mapping table (36) associated with a particular pattern corresponding to each group in a link; and creating an assign action tuple loading action in the pattern mapping table (36) associated with a particular pattern corresponding to each pair in the same link; corresponding to each link: in the link pattern table (col. 11, lines 58-67, col. 13, lines 18-22 ; also see col. 2, lines 12-18 and col. 12, lines 35-38); forming a tree structure (300) with the document data (col. 14, lines 62-67 and col. 15, lines 1-5); and traversing the formed tree (300) and updating the at least one relational database (14) table according to the rows of the pattern mapping table (col. 15, lines 58-67).

Claim 48 is essentially the same as claim 18 except that it is directed to a system rather than a method (see fig. 7(a) and 7(b) col. 17, lines 20-41), and is rejected for the same reason as applied to the claim 18 hereinabove.

Claim 49 is essentially the same as claim 19 except that it is directed to a system rather than a method (see fig. 7(a) and 7(b) col. 17, lines 20-41), and is rejected for the same reason as applied to the claim 19 hereinabove.

Claim 50 is essentially the same as claim 20 except that it is directed to a system rather than a method (col. 8, lines 5-10), and is rejected for the same reason as applied to the claim 20 hereinabove.

Claim 51 is essentially the same as claim 21 except that it is directed to a system rather than a method (col. 7, lines 17-22 and col. 18, lines 45-54), and is rejected for the same reason as applied to the claim 21 hereinabove.

Claim 52 is essentially the same as claim 22 except that it is directed to a system rather than a method (col. 13, lines 46-50), and is rejected for the same reason as applied to the claim 22 hereinabove.

Claim 53 is essentially the same as claim 23 except that it is directed to a system rather than a method (col. 14, lines 36-42 and also see col. 7, lines 17-22), and is rejected for the same reason as applied to the claim 23 hereinabove.

Claim 54 is essentially the same as claim 24 except that it is directed to a system rather than a method (col. 7, lines 17-22 and col. 13, lines 46-50), and is rejected for the same reason as applied to the claim 24 hereinabove.

With respect to claim 55, Cheng discloses retrieves a preselected set of rows corresponding to each item in the metadata item table (col. 12, lines 35-38).

Claim 56 is essentially the same as claim 25 except that it is directed to a system rather than a method (col. 12, lines 35-38 and col. 13, lines 46-50), and is rejected for the same reason as applied to the claim 25 hereinabove.

Claim 57 is essentially the same as claim 26 except that it is directed to a system rather than a method (col. 12, lines 35-38 and col. 13, lines 46-50), and is rejected for the same reason as applied to the claim 26 hereinabove.

Claim 58 is essentially the same as claim 27 except that it is directed to a system rather than a method (col. 11, lines 58-67, col. 13, lines 18-22; also see col. 2, lines 12-18 and col. 12, lines 35-38), and is rejected for the same reason as applied to the claim 27 hereinabove.

Claim 59 is essentially the same as claim 28 except that it is directed to a system rather than a method (col. 14, lines 62-67 and col. 15, lines 1-5), and is rejected for the same reason as applied to the claim 28 hereinabove.

Claim 60 is essentially the same as claim 29 except that it is directed to a system rather than a method (col. 15, lines 58-67), and is rejected for the same reason as applied to the claim 29 hereinabove.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh Ly whose telephone number is 703 306-4527 or via E-Mail: ANH.LY@USPTO.GOV. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 703 305-4393. The fax phone number for the organization where this application or proceeding is assigned is 703 746-7239.

Any response to this action should be mailed to:

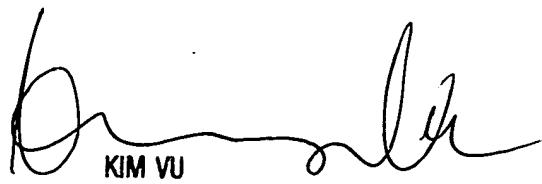
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or faxed to: Central Office (703) 872-9306 (effective from 08/04/2003)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Fourth Floor (receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-6606 or 703 305-3900.



KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

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Nov. 7th, 2003